

REMARKS

In the Office Action, the Examiner alleged that the oath/declaration in the name of Sanghoon Lee filed March 30, 2001 was defective because the year was left out of the signature date. A new declaration on behalf of Sanghoon Lee including the complete date of execution is attached to the present response.

Claims 20-25, 31-34, 36, 38, and 40-46 are pending in the present application.

In the Office Action, claims 20-25, 31-34, 36, 38, 45, and 46 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner's rejections are respectfully traversed.

The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the person of ordinary skill in the art that the inventor had possession at that time of the later claimed subject matter. Applicants note that the point in the visual field corresponding to the focal point of the eye is often referred to as the foveation point. See Patent Application, page 2, ll. 1-10. Applicants also note that the specification states that a foveated area around the foveation point may be defined using a local or remote pointing device that may be used to control the direction of a video camera. See Patent Application, page 5, ll. 15-17.

In the Final Office Action, the Examiner admits that the specification describes defining a foveation area but alleges that the specification does not describe determining the focal point of the eye. The Examiner further alleges that this type of process requires processes different than the processes described in the specification. Applicants respectfully disagree and note that the techniques described in the specification are well known techniques for defining foveation points and foveation areas in images based on the focal point of an eye. For example, the background section states that foveation points and foveation areas may be defined using a video camera, an

eye-tracking device, a computer mouse, and/or a joystick. See Patent Application, page 2, line 6- page 3, line 4. Applicants also submit that Lee, et al ("Unequal Error Protection for Foveation-Based Error Resilience over Mobile Networks," IEEE 2000) also describes defining foveation points and foveated areas based upon the focal point of an eye. Furthermore, the Examiner has provided no evidence in support of his allegation that the techniques described in the specification cannot be used to determine foveation points and/or foveated areas based on the focal point of an eye. Thus, Applicants respectfully submit that the specification reasonably conveys to the artisan numerous techniques for defining a foveation point in a video image based on a focal point of an eye.

For at least the aforementioned reasons, Applicants respectfully submit that the pending claims comply with the written description requirement and requests that the Examiner's rejections of claims 20-25, 31-34, 36, 38, 45, and 46 under 35 U.S.C. § 112, first paragraph, be withdrawn.

In the Office Action, claims 20-25, 31-34, 36, 38, 45, and 46 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Heinzelman, et al (U.S. Patent No. 6,754,277). Claims 40-44 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Heinzelman in view of Applicants' Admitted Prior Art. The Examiner's rejections are respectfully traversed.

As discussed above, the visual field produced by a human eye is foveated, *i.e.* the resolution of images in the visual field exponentially decreases away from the focal point of the eye. The point in the visual field corresponding to the focal point of the eye is often referred to as the foveation point. The amount of data required to represent images in the video field may be reduced by removing high frequency data components from areas of the lesser importance in

the visual field, *i.e.* background areas outside a foveation area that is proximate the foveation point. See Patent Application, page 2, ll. 1-10.

Thus, independent claims 20, 25, 40, and 45 set forth, among other things, defining at least one foveation point in a video image and defining at least one foveated area in proximity to the foveation point. For example, the foveated area may be defined using a local or remote pointing device that may be used to control the direction of a video camera. See Patent Application, page 5, ll. 15-17. Applicants also describe and claim extracting a first plurality of data signals from a video image representing the foveated area and extracting a second plurality of data signals from the video image representing a background area. Applicants further claim encoding the extracted first plurality of data signals with a first error correction protocol to create a first encoded signal and encoding the extracted second plurality of data signals with a second error correction protocol different from the first error correction protocol.

Claim 46 sets forth decoding a first signal indicative of at least one foveation area around a foveation point in a video image, wherein the first signal is encoded according to a first error correction protocol. Claim 46 also sets forth correcting errors within the first signal using a high-priority processing step to create a received foveated area and decoding a second signal indicative of a background area in the video image, wherein the second signal is encoded according to a second error correction protocol different from the first error correction protocol. Claim 46 further claims correcting errors within the second signal using a low priority processing step to create a received background area.

Heinzelman describes partitioning a video image into motion data and texture data and then providing error protection for the motion data that is greater than the error protection that is provided for the texture data. In the Final Office Action, the Examiner alleges that Heinzelman

describes determining a foveation area because the present patent application states that a foveation area may correspond to a moving portion of the image. However, Applicants respectfully submit that Heinzelman does not explicitly determine a foveation point or a foveation area. The Examiner apparently agrees with this conclusion and has not alleged that Heinzelman explicitly describes determining a foveation point or a foveation area. Applicants therefore submit that the Examiner is alleging that Heinzelman inherently describes determining a foveation area because Heinzelman describes partitioning a video image into motion data and texture data. Applicants respectfully disagree and submit that Heinzelman does not inherently describe determining a foveation area.

Inherency in anticipation requires that the asserted proposition *necessarily* flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. (BNA) 323, 326 (C.C.P.A. 1981); *Levy*, 17 U.S.P.Q.2d (BNA) at 1463-64; *Skinner*, at 1789; *In re King*, 231 U.S.P.Q. (BNA) 136, 138 (Fed. Cir. 1986). It is not enough that a reference could have, should have, or would have been used as the claimed invention. "The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Oelrich*, at 326, quoting *Hansgird v. Kemmer*, 40 U.S.P.Q. (BNA) 665, 667 (C.C.P.A. 1939); *In re Rijckaert*, 28 U.S.P.Q.2d (BNA) 1955, 1957 (Fed. Cir. 1993), quoting *Oelrich*, at 326; *see also Skinner*, at 1789. In the present case, Applicants respectfully submit that simply using motion to select portions of the image does not necessarily imply that the selected portion of the image is a foveation area.

As discussed in the previous response, foveation points are defined to be the points of highest visual importance as perceived by the human eye. Foveation areas are areas around the foveation points that are perceived by the human eye with the highest sensitivity. Accordingly, foveation points and the associated foveation areas are determined by the physiology of the

human eye and the sensory operations in the human brain. Foveation points and the associated foveation areas are not necessarily associated with any particular characteristic of an image. In particular, a moving portion of the image may not necessarily correspond to a foveation point and/or a foveation area. For example, a stationary object seen against a moving background may correspond to a foveation point and/or a foveation area. Applicants therefore submit that partitioning a video image into motion data and texture data does not necessarily correspond to selecting a foveation area from the video image.

Accordingly, Applicants respectfully submit that Heinzelman does not describe or suggest, either explicitly or inherently, defining at least one foveation point in a video image. Heinzelman also fails to teach or suggest, either explicitly or inherently, defining at least one foveated area in proximity to the foveation point. Accordingly, Heinzelman fails to teach or suggest, either explicitly or inherently, providing different encoding schemes for data signals corresponding to a foveated area and a background area.

For at least the aforementioned reasons, Applicants respectfully submit that the present invention is not anticipated by Heinzelman and request that the Examiner's rejections of claims 20-25, 31-34, 36, 38, 45, and 46 under 35 U.S.C. 102(e) be withdrawn.

Moreover, it is respectfully submitted that the pending claims are not obvious in view of Heinzelman and the admitted prior art, either alone or in combination. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. As discussed above, Heinzelman fails to teach or suggest (explicitly or inherently) defining at least one foveation point in a video image. Heinzelman also fails to teach or suggest defining at least one foveated area in proximity to the foveation point. Accordingly,

Heinzelman fails to teach or suggest providing different encoding schemes for data signals corresponding to a foveated area and a background area.

Heinzelman also fails to provide any suggestion or motivation for modifying the prior art to arrive at Applicants claimed invention. To the contrary, Heinzelman appears to teach away from Applicants' claimed invention. In particular, Heinzelman teaches that motion information in a video image has a relatively high level of importance because motion-compensation cannot be performed without the motion information. See Heinzelman, col. 2, ll. 46-49. Thus, Heinzelman teaches that video images should be partitioned into motion data and texture data, regardless of whether or not the motion data and/or the texture data are proximate to a foveation point. Thus, Applicants respectfully submit that Heinzelman teaches away from defining at least one foveation point in a video image and defining at least one foveated area in proximity to the foveation point. Heinzelman also teaches away from providing different encoding schemes for data signals corresponding to a foveated area and a background area. It is by now well established that teaching away by the prior art constitutes *prima facie* evidence that the claimed invention is not obvious.

For at least the aforementioned reasons, Applicants respectfully submit that the present invention is not obvious over Heinzelman and the Admitted Prior Art, either alone or in combination. Applicants respectfully request that the Examiner's rejections of claims 40-44 under 35 U.S.C. 103(a) be withdrawn.

For the aforementioned reasons, it is respectfully submitted that all claims pending in the present application are in condition for allowance. The Examiner is invited to contact the undersigned at (713) 934-4052 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

/Mark W. Sincell/

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